

Serial No. 09/996,290
Amendment dated August 21, 2006
Reply to Official Action dated June 21, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claims 1-32 (Canceled).

Claim 33 (Currently Amended): A method according to claim 70 68, comprising introducing an agent capable of counteracting the formation of a secondary cataract by epithelial cell growth on the capsular bag inner wall, before delivering the lens forming material.

Claim 34 (Cancelled).

Claim 35 (Currently Amended): A method according to claim 37 34, wherein said excised area is intersected by the optical axis.

Claim 36 (Previously Presented): A method according to claim 35, wherein said excised area is of a size sufficient to essentially extend over the visual field.

Claim 37 (Previously Presented): A method of performing visual correction in a patient by replacing the natural lens with a lens implant, comprising:

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(a) excising an area of the anterior capsular bag of the eye having a sufficient size to surgically remove the natural lens;

(b) locating a sealing device comprising a flexible plug part and removable adjusting means of a size sufficient to cover said excised area with said adjusting means to a position where a peripheral anterior surface of said plug part contacts the inner wall of the capsular bag so as to sufficiently cover said excised area, without additional sealing means, wherein the adjusting means protrudes outside the eye and is operated from outside of the eye to locate the sealing device;

(c) delivering a lens filling material into the capsular bag by using a delivering means to temporarily displace and/or deform said plug part to admit passage into the capsular bag of said material;

(d) before removing the delivery means, introducing lens forming material into the capsular bag to an extent that said material exerts a sufficient pressure on the posterior side of the plug part to seal the excised area without additional sealing means, so said lens material is prevented from being displaced from the capsular bag to the posterior chamber of the eye; and

(e) finalizing the lens forming process in the eye,

wherein the adjusting means of the sealing device is removed from the eye after completing the introduction of lens forming material into the capsular bag.

Claim 38 (Previously Presented): A method according to claim 37, comprising removing the adjusting means of the sealing device from the eye upon finalizing the lens forming process.

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Claim 39 (Currently Amended): A method according to claim 37 34, comprising introducing an agent capable of counteracting the formation of a secondary cataract by epithelial cell growth on the capsular bag inner wall, before delivering the lens forming material.

Claim 40 (Withdrawn and Currently Amended): A method according to claim 37 34, comprising the step of introducing the lens-forming material to the capsular bag through a cut in the plug part.

Claim 41 (Currently Amended): A method according to claim 37 34, comprising measuring the corneal topography of the cornea and thereby the amount of aberrations of a wavefront arriving from the cornea and selecting a sealing device having a plug part with at least one surface that is capable of compensating for at least one such aberration.

Claim 42 (Previously Presented): A method according to claim 41, including estimating at least one aberration of the lens to be formed in the capsular bag and selecting a sealing device having a plug part which together with said implanted lens is adapted to compensate for at least one such aberration.

Claim 43 (Previously Presented): A method according to claim 41, comprising introducing an agent capable of counteracting the formation of a secondary cataract by epithelial cell growth on the capsular bag inner wall, before delivering the lens forming material.

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Claim 44 (Cancelled).

Claim 45 (Currently Amended): A sealing device according to claim 57 44, wherein the sealing device is free from any parts protruding out from the capsular bag subsequent to the surgical process.

Claim 46 (Currently Amended): A sealing device according to claim 57 44, wherein said plug part is essentially disc-shaped.

Claim 47 (Cancelled).

Claim 48 (Currently Amended): A sealing device according to claim 57 44, wherein said plug part is made of a suitable soft material and is sufficiently thin to follow accommodation movements of the capsular bag.

Claim 49 (Currently Amended): A sealing device according to claim 57 44, wherein said plug part is made of a silicon material.

Claim 50 (Currently Amended): A sealing device according to claim 57 44, wherein said plug part is made of a material having essentially the same refractive index as the material inserted in the capsular bag.

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Claim 51 (Withdrawn and Currently Amended): A sealing device according to claim 57 44, wherein the plug part is provided with contacting means to the capsular bag, wherein the contacting means is adapted to ensure that a correct accommodating process is established.

Claim 52 (Withdrawn): A sealing device according to claim 51, wherein said contact means comprises a friction-enhanced part of an anterior surface of the posterior plug.

Claim 53 (Withdrawn): A sealing device according to claim 52, wherein at least a surface contacting the inner wall of the capsular bag has a roughened surface.

Claim 54 (Currently Amended and Withdrawn): A sealing device according to claim 57 44, including an anteriorly extending ring in the middle with a diameter adapted to fit into the rhexis from below, the ring being adapted to stabilize the position of the sealing device in the rhexis.

Claims 55-56 (Cancelled).

Claim 57 (Previously Presented): A sealing device for use in ophthalmic surgery to replace a cataractous and/or presbyopic natural lens, comprising a flexible plug part adapted to seal a capsulorhexis of a capsular bag without additional sealing means and to admit an injection device for injecting a lens-forming liquid material through the capsulorhexis

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without additional sealing means, said plug part having slightly larger area than the capsulorhexis and being made of a deformable polymer, wherein said sealing device further comprises an anteriorly protruding removable adjusting means comprising at least one flexible thread connected to and protruding in an anterior direction from the plug part, wherein said at least one thread is of a length sufficient to protrude outside the eye and can be manipulated from outside the eye to position said plug part to a desired location.

Claim 58 (Withdrawn and Currently Amended): A sealing device according to claim 57 44, wherein the plug part is provided with a cut adapted to admit passage of a lens-forming material.

Claim 59 (Withdrawn): A sealing device according to claim 58, wherein the cut is provided with an overlapping part adapted to seal the cut when the injection is completed.

Claim 60 (Currently Amended): A sealing device according to claim 57 44 adapted to be positioned in a rhexis of about 1 mm in diameter positioned off the optical axis of the eye.

Claim 61 (Currently Amended): A sealing device according to claim 57 44 adapted to be positioned in a rhexis of more than 1 mm in diameter positioned to include the optical axis of the eye.

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Claim 62 (Currently Amended): A sealing device according to claim 57 44, wherein the plug part is adapted to remain in the capsular bag after an intraocular lens-forming process is completed.

Claim 63 (Previously Presented): A sealing device according to claim 61, wherein said plug part is optically clear.

Claim 64 (Previously Presented): A sealing device according to claim 61, wherein said plug part is adapted to cover the whole path of light that is admitted by the pupil.

Claim 65 (Previously Presented): A sealing device according to claim 64, adapted to compensate for aberration.

Claim 66 (Previously Presented): A sealing device according to claim 64, adapted to correct for error of refraction in the eye.

Claim 67 (Currently Amended): A sealing device according to claim 57 44, adapted to be removed after the intraocular lens-forming process is completed.

Claims 68-69 (Cancelled).

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Claim 70 (Currently Amended): A method of obtaining visual correction subsequent to surgically removing the natural lens, comprising the steps of:

inserting a plug part of a sealing device comprising a plug part without additional sealing means through a capsulorhexis, said plug part being adapted to cover and seal the capsulorhexis from the inside of the capsular bag without additional sealing means;

adjusting the location of said plug part with an adjusting means operable from the outside of the capsular bag, wherein the adjusting means protrudes outside the eye and is operated from outside the eye to locate the sealing device;

delivering a lens-forming material through the capsulorhexis into the capsular bag by using a delivering means and by displacing and/or deforming the plug part to admit the material;

~~removing the delivering means from the eye;~~ and

removing the adjusting means when the plug part seals the capsulorhexis by the influence of the lens-forming material in the capsular bag,

whereby the plug part retains a sealing position without additional sealing means, thereby preventing displacement of the lens-forming liquid material from the capsular bag.

Claims 71-72 (Cancelled).

Claim 73 (Currently Amended): A method according to claim 70 68, further comprising measuring the error of refraction of the eye and optionally selecting a sealing device having a plug part capable of at least partially compensating for an error of refraction.

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Claim 74 (Currently Amended): A method according to claim 70 ~~68~~, further comprising measuring the corneal topography of the cornea and thereby the amount of aberrations of a wavefront arriving from the cornea, and selecting a sealing device having a plug part with at least one surface that is capable of compensating for at least one such aberration.

Claim 75 (Currently Amended): A method according to claim 70 ~~68~~, including estimating at least one aberration of the lens to be formed in the capsular bag and selecting a sealing device having a plug part which is adapted, together with an implanted lens, to compensate for at least on such aberration.

Claim 76 (Currently Amended): A method according to claim 37 ~~34~~, wherein the sealing device is located to a position where the sealing device does not contact an outer wall of the capsular bag.

Claim 77 (Currently Amended): A sealing device according to claim 37 ~~44~~, wherein the plug part is adapted to seal a capsulorhexis of a capsular bag without the sealing device contacting an outer wall of the capsular bag.

Claim 78 (Cancelled).

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Claim 79 (Currently Amended): A method according to claim 70 ~~68~~, wherein the sealing device is located to a position where the sealing device does not contact an outer wall of the capsular bag.

Claims 80 - 82 (Cancelled).